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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/517,640

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Stephan Fegert

FEGERT

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HENRY M FEIEREISEN, LLC

HENRY M FEIEREISEN

708 THIRD AVENUE

SUITE 1501

NEW YORK, NY 10017

EXAMINER

BOR, HELENE CATHERINE

ART UNIT

PAPER NUMBER

3768

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/517,640	<b>Applicant(s)</b> FEGERT ET AL.	
	<b>Examiner</b> HELENE BOR	<b>Art Unit</b> 3768	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 May 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2-4, 7-21, 26 and 31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-4, 7-21, 26 and 31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                      |                                                                   |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____                                                          | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

#### ***Continued Examination Under 37 CFR 1.114***

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 05/23/2008 has been entered.

#### ***Claim Rejections - 35 USC § 102***

3. Claim 26 & 31 rejected under 35 U.S.C. 102(b) as being anticipated by Kuckes'755 (US Patent No. 5,258,755).

**Claim 26 & 31:** Kuckes'755 teaches determining the location of an instrument (Abstract) comprising the steps of rotating at least one magnet that is rotated to produce a magnetic field to generate a magnetic moment perpendicular to an axis of the instrument (Col. 10, Line 46-50). Kuckes'755 teaches a method for modulating frequency for variation of the magnetic field generated by the magnet (Col. 9, Line 35-59 & Col. 10, Line 50-54). Kuckes'755 teaches detecting the three time-dependent magnetic field components (Col. 2, Line 60 – Col. 3, Line 24). Kuckes'755 teaches a method for elimination of disturbance fields (Col. 11, Line 3-9).

***Claim Rejections - 35 USC § 103***

4. Claim 2-3, 7-9, 12-14 & 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuckes'755 (US Patent No. 5,258,755) and further in view of Haynor'230 et al. (US Patent No. 6,263,230 B1).

**Claim 9, 12 & 20:** Kuckes'755 teaches determining the location of an instrument (Abstract) wherein at least one magnet produces a magnetic moment perpendicular to an axis of the instrument and a drive for rotating the magnet independently from the instrument shaft (Col. 6, Line 7-11 & Col. 10, Line 46-50). While Kuckes'755 hints in US Patent No. 5,258,755 about finding the instantaneous angular position [roll angle], Haynor'230 explains the process in more detail (Col. 26, Line 60-61) to advantageously calculate six degree of freedom (Col. 26, Line 64-65). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Kuckes'755 to include the roll angle measurement as taught by Haynor'230 in order to advantageously calculate six degree of freedom (Col. 26, Line 64-65). Kuckes'755 teaches the use of a solenoid, however, Haynor'230 teaches an alternative electromagnetic arrangement which teaches two magnets with orthogonal axis of magnetization, wherein the magnet (Figure 12, Element 302) produces the same end result magnetic field lines as the solenoid (Figure 3, Element 54). It would have been obvious to one of ordinary skill in the art to substitute the solenoid of Kuckes'755 with the rotating magnetic as taught by Haynor'230 as an alternative expedient in art of electromagnetic field generation (Figure 12, Element 302). Kuckes'755 teaches a

frequency modulation and/or amplitude modulation for variation of the magnetic field generated by the magnet (Col. 9, Line 35-59).

**Claim 2:** Kuckes'755 teaches a receiver [magnetometer] which detects the three time-dependent magnetic field components (Col. 2, Line 60 – Col. 3, Line 24).

**Claim 3:** Kuckes'755 teaches an evaluation unit [computer] for determining parameters such as position (Col. 7, Line 39-46) or position of the instrument axis (Col. 9, Line 8-12).

**Claim 7:** Kuckes'755 teaches the drive being an electrical drive (Col. 10, Line 46-50).

**Claim 8:** Kuckes'755 teaches the drive is a hydraulic drive using liquid to drive the magnet (Col. 10, Line 41-46).

**Claim 13:** Kuckes'755 teaches the instrument having a drill or cutting apparatus (Figure 1, Element 32).

**Claim 14:** Kuckes'755 teaches the instrument has an opening for ejection of a liquid such as drilling fluid (Figure 5, Element 36).

**Claim 17:** Kuckes'755 teaches an apparatus [such as a computer] for recording electrical data (Figure 1, Element 24).

**Claim 18:** Kuckes'755 teaches using transmitters and receivers for processing signals to determine a position of the instrument at different points (Figure 1, Element 20 & Element 8).

**Claim 19:** Kuckes'755 teaches a transmitter constructed as a permanent magnet (Figure 1, Element 40) and configured to produce different frequencies,

amplitudes and/or by the production of different analog or digital values (Col. 9, Line 35-59).

5. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuckes'755 (US Patent No. 5,258,755), in view of Haynor'230 et al. (US Patent No. 6,263,230 B1) as applied to claims 2-3, 7-9, 12-14 & 17-20 and further in view of Kuckes'775 (US Patent No. 5,589,775).

**Claim 21:** Kuckes'755 and Haynor'230 fail to teach shielding. However, Kuckes'775 teaches a gradual shielding of the magnet (Col. 9, Line 65 – Col. 10, Line 11). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Kuckes'755 and Haynor'230 to include the shielding as taught by Kuckes'775 in order to give a good distance determination and provide a reference channel (Col. 10, Line 7-9).

6. Claim 4 & 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuckes'755 (US Patent No. 5,258,755), in view of Haynor'230 et al. (US Patent No. 6,263,230 B1) as applied to claims 2-3, 7-9, 12-14 & 17-20 and further in view of Bladen'820 et al. (US Patent No. 5,913,820).

**Claim 4:** Kuckes'755 and Haynor'230 fail to teach the sensor in the instrument axis and the magnet on the outside. However, Bladen'820 teaches a magnetic field sensor disposed in the instrument axis, and a magnet disposed outside the instrument axis (Col. 2, Line 36-40). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Kuckes'755 and Haynor'230 to include magnetic field sensor disposed in instrument axis as taught by Bladen'820 in order to

achieve a surprisingly accurate estimate of the position of the sensor in a computationally simple manner (Col. 2, Line 66 – Col. 3, Line 2).

**Claim 15 & 16:** Kuckes'755 and Haynor'230 fails to teach an apparatus for emission of light beams, laser beams, radioactive beams, sound waves or ultrasound waves and fails to teach an apparatus for ultrasound/optical imaging. However, Bladen'820 teaches using a magnetic positioning system in combination with a colonoscope capable of imaging (Col. 12, Line 15-44 & 64-67). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Kuckes'755 and Haynor'230 to include the emission of various energy waves as taught by Bladen'820 in order to present the operator with a convenient view of the path of the instrument (Col. 12, Line 67 – Col. 13, Line 2).

7. Claim 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuckes'755 (US Patent No. 5,258,755), in view of Haynor'230 (US Patent No. 6,263,230 B1) as applied to claims 2-3, 7-9, 12-14 & 17-20 and further in view of CreightonIV'196 (US Patent No. 6,537,196 B1).

**Claim 10:** Kuckes'755 and Haynor'230 fail to sufficiently teach a reproducible deflection. However, CreightonIV'196 teaches an apparatus for providing a reproducible deflection of the magnet from its rotation axis (Col. 6, Line 7-11), wherein the reversing the magnetic field is considered a deflection. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Kuckes'755 and Kuckes'775 to include the reproducible deflection as taught by

CreightonIV'196 in order to ensure proper navigation of the magnetic object through the medium (Col. 6, Line 29-36).

**Claim 11:** Kuckes'755 and Haynor'230 fail to teach an apparatus with means to interrupt the rotation of the magnet. CreightonIV'196 teaches means to interrupts the rotation of the magnet (Col. 6, Line 20-24). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Kuckes'755 and Haynor'230 to include the magnetic rotation interruption as taught by CreightonIV'196 in order to ensure proper navigation of the magnetic object through the medium (Col. 6, Line 29-36).

### ***Response to Arguments***

8. Applicant's arguments, see Page 6, filed 05/23/2008, with respect to the claim objections have been fully considered and are persuasive. The objections of the claims have been withdrawn.

9. Applicant's arguments, see Page 6, filed 05/23/2008, with respect to 35 U.S.C. 112, second paragraph have been fully considered and are persuasive. The 35 U.S.C. 112, second paragraph rejection of the claims has been withdrawn.

10. Applicant's arguments with respect to claim 2-4, 7-21, 26 & 31 have been considered but are moot in view of the new ground(s) of rejection. The Examiner contends the deficiencies of Kuckes'755 are addressed in combination with Haynor'230 (US Patent No. 6,263,230 B1).



***Conclusion***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Helene Bor whose telephone number is 571-272-2947. The examiner can normally be reached on M-T 8:30am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571-272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/H. B./  
Examiner, Art Unit 3768

/Eric F Winakur/  
Primary Examiner, Art Unit 3768